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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/074,495 | 02/11/2002 | Allan Parker | G1255 | 7446 |

7590 04/07/2004

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[REDACTED] EXAMINER

YOHA, CONNIE C

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| | 2818 |

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|----------------------------|------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/074,495 | PARKER ET AL. |
| | Examiner Connie C. Yoha | Art Unit 2818 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 08 January 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-6,8,9,11-19,21,22,24 and 25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-6,8,9,11-19,21,22,24 and 25 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 08 January 2004 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachments(s)

| | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>1203</u> . | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Response to Amendment

1. The Amendment filed on 1/08/04 has been entered and are made of record.
2. Claims 1, 6, 14, 18, 19, and 21 are amended.
3. Claims 7, 10, 20 and 23 are canceled.
4. Claim 1-6, 8-9, 11-19, 21-22, and 24-25 are pending.
5. Applicant's arguments with respect to claims 1-6, 8-9, 11-19, 21-22, and 24-25 have been considered but are moot in view of the new ground(s) of rejection due to the amended claims. Examiner uses new cited reference (Bill et al, U.S. Pat. 5724284) to reject claim 1-6, 8-9, 11-19, 21-22, and 24-25.

Claim Rejections - 35 USC § 112

6. Claim 3 and 18 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is vague and not clear, therefore can not be understood by the examiner with regard to the limitation on line 2 of claim 3 and line 11-12 stating that "wherein said page buffer comprises pre-charged register" when in fact, the amended figure 6 shows that precharge register (624) is separate from page buffer (622). That is the page buffer (622) is not further included the precharge register (624).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1-6, 8-9, 11-19, 21-22, and 24-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Bill et al, U.S. Pat. 5724284.

With regard to claim 1 and 14, Bill discloses a semiconductor device comprising: a plurality of multi level flash memory cells (col. 1, line 14-19), wherein said cells have erased state and three programmed states; and wherein said cells are programmed from a first state directly to a second programmed state by writing two bits of information to the cell being programmed (col. 4, line 46-51).

With regard to claim 2, Bill discloses a device further comprises a page buffer (fig. 3, 38), wherein the page buffer is for combining existing cell storage conditions with new partial page information (col. 8, line 7-col. 9, line 57) (also with regard to claim 4-5, 15-17).

With regard to claim 3, Bill discloses the page buffer comprises pre-charged registers (col. 8, line 15-24).

With regard to claim 18, Bill discloses a semiconductor device comprising: a bus; a plurality of external ports for receiving programming information coupled to the bus (fig. 1, terminals running from and to memory core cell array through external logic controller 354); a plurality of memory cells (fig. 1, 12) for the non-volatile storing of two

bits of information, wherein the memory cells have erased state and three programmed states, and are coupled to the bus (col. 4, line 46-51); a page buffer (fig. 1, 38) for combining new programming information with previously stored information to produce program verify information, wherein the page buffer is composed of pre-charged registers coupled to the bus (col. 8, line 7-col. 9, line 57); and a state machine (fig. 1, 354) for placing new said programming information into the page buffer coupled to the bus; said state machine also for placing previously stored information into the page buffer; said state machine also for programming said program verify information into the memory cells by writing two bits of information to the cell being programmed (col. 9, line 29-44).

Drafted as Method claim

As per claim 6, 8, 11-13, 19-25, they encompass the same scope of invention as to that of claim 1-5 except they draft in method format instead of apparatus format. The claims are therefore rejected for the same reason as set forth above.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action. The prior art of record also does not show the limitation of a switch for electrically separating the second memory cell array from the first memory cell array under control of the third memory controller when the write operation of the second memory cell array is performed a predetermined number of times before the write operation is performed in the first memory cell array (with regard to claim 13).

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kawamura (6288936) and Yoo (6067248) discloses EEPROM memory device having multi-value data.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to whose telephone number is (571) 272-1799. The examiner can normally be reached on Mon. - Fri. from 8:00 A.M. to 5:30 PM. The examiner's supervisor, David Nelms, can be reached at (571) 272-1787. The fax phone number for this Group is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-0956.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov> should you have questions on access to the Private Pair system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



C.Yoha

March 2004



Connie C. Yoha

AU 2818